

## **LISTING OF CLAIMS**

The following listing of claims will replace all prior listings of claims in this application.

I claim:

1-106. (Canceled).

107 -128 (Canceled)

50. (canceled) The multi-position reclining bed of claim 103, wherein the thigh section and calves section are configured into a locked position utilizing lock springs, in an elongated state, that force a transfer link to remain in an over centered locked position.

51. (canceled) The multi-position reclining bed of claim

102, wherein the buttocks section is capable of pivoting in an upward

direction about the bottom edge of the back section.

52. (canceled) The multi-position reclining bed of claim 51, wherein the lower footward edge of the of said buttocks section is capable of elevating in an upwards direction.

53. (canceled) The multi-position reclining bed of claim 52, further comprising a plurality of arm rests.

54. (canceled) The multi-position reclining bed of claim 102, further comprising a swing arm attached to any of the supporting elements.

55. (canceled) The multi-position reclining bed of claim 54, wherein the armrest is attached to a swing arm.

**56. (canceled) The multi-position reclining bed of claim 54,**

**wherein the armrest is capable of pivoting substantially horizontally to a**

**position over the bed.**

**57. (canceled) The multi-position reclining bed of claim 54,**

**wherein the swing arm is capable of locking into position utilizing a**

**swivel lock.**

**58. (canceled) The multi-position reclining bed of claim 54, further**

**comprising a desk attached to the swing arm.**

59. (canceled) The multi-position reclining bed of claim 54, further comprising electrical and data connections, wherein the electrical and data connections are secured to the swing arm such that they are accessible to the occupant of the bed.

60. (canceled) The multi-position reclining bed of claim 59, wherein the data connection is capable of providing an internet and/or telephone connection.

61. (canceled) The multi-position reclining bed of claim 102 further comprising a plurality of the following elements:

a. pivot fixtures;

b. connecting bars;

c. transfer links;

d. projections;

e. stops; and

f. lock springs.

62. (canceled) The multi-position reclining bed of claim 61, wherein the pivot fixture is pivotally connected between the buttocks section and the thigh section.

63. (canceled) The multi-position reclining bed of claim 61, wherein the transfer link has a plurality of pivot points, including a lower transfer link pivot point that is connected to the linear actuator, a foot end pivot that is pivotally connected to the connecting bar and to the opposite end of the

connecting bar, and a pivot point that is pivotally connected to the feet elevating mechanism.

64. (canceled) The multi-position reclining bed of claim 61, wherein the pivot of the transfer link is located between the lower pivot and the foot end pivot.

65. (canceled) The multi-position reclining bed of claim 61, wherein the transfer link is pivotally connected to the feet elevating mechanism.

66. (canceled) The multi-position reclining bed of claim 61, wherein the transfer link is pivotally connected to the pivot fixture.

67. (canceled) The multi-position reclining bed of claim 61, wherein while the thigh section and the calves section are reclined below horizontal, the force of foot ward motion of the linear actuator on the lower transfer link pivot point causes upward rotation of the following elements in an upward direction about the distal end pivot of the pivot fixture until the projection of the pivot fixture engages the stop secured to the thigh section at a substantially horizontal position:

- a. the pivot fixture;
- b. the calves section;
- c. the thigh section; and
- d. the feet elevating mechanism.

68.(canceled) The multi-position reclining bed of claim 61, wherein the footward motion of the linear actuator results in rotation of the transfer link about the transfer link fixture pivot, causing lifting of the following sections from resting points on the pivot fixture, the calves

section, and the stop, while elongating the lock spring:

- a. the thigh section;
- b. the calves section; and
- c. the feet elevating mechanism.

69.(canceled) The multi-position reclining bed of claim 63, wherein the lower transfer link pivot is located along the pivot fixture.

70.(canceled) The multi-position reclining bed of claim 69, wherein the linear actuator and the buttocks section form a double bar linkage resulting in substantially minor vertical movement of the lower edge of the calves section of the coplanar leg section as the buttocks section is reclined.

71. (canceled) The multi-position reclining bed of claim 50, further comprising a box spring having a reduced thickness at the lower edge of the calves section.

72. (canceled) The multi-position reclining bed of claim 71, further comprising:

- a. fabric material;
- b. peripheral frame; and
- c. a peripheral frame spring.

**73. (canceled) The multi-position reclining bed of claim 72, wherein the fabric material encloses the frame elements.**

**74. (canceled) The multi-position reclining bed of claim 72, wherein the peripheral frame**

**a. pivots at distal end pivots;**

**b. forms the lower edge of the foot end of the bed; and**

c. forms both sides of the bed below the surface of the calves section and/or the thigh section.

75. (canceled) The multi-position reclining bed of claim 72, wherein the peripheral frame spring elongates when it is rotated below the horizontal position about the distal end pivot.

76. (cancelled) The multi-position reclining bed of claim 72, further comprising a plurality of cams and cam followers.

77. (canceled) The multi-position reclining bed of claim 76, wherein the cam contour controls the elevation position of the peripheral frame.

78. (canceled) The multi-position reclining bed of claim 77 wherein the peripheral frame is capable of elevating the calves section above the thigh and buttocks section.

79. (canceled) The multi-position reclining bed of claim 102, wherein the mattress elements comprise surfaces with differing frictional coefficients.

80. (canceled) The multi-position reclining bed of claim 71, further comprising a releasable mechanical holding device that secures the mattress element to the box spring.

81. (canceled) The multi-position reclining bed of claim 80, wherein the releasable mechanical holding device is located at a sufficient distance from the perimeter of the mattress and box spring to avoid interference with the

placement of sheets and/or other bedding materials around the width of the mattress.

82. (canceled) The multi-position reclining bed of claim 80, wherein the releasable mechanical holding device comprises a barb and loop fastening arrangement.

83. (canceled) The multi-position reclining bed of claim 102, further comprising:

- a. a threaded coupling half
- b. a fixed coupling half;

c. a bearing; and

d. a thread spring.

84. (canceled) The multi-position reclining bed of claim 83, wherein the coupling disengages during reclining motion by action of rotating a thread that separates the threaded coupling half from the fixed coupling half.

85. (canceled) The multi-position reclining bed of claim 84, wherein the rotation of the thread is along the axis of the thread against compression force of the thread spring whereby free rotation of the threaded coupling half on the thread prevents further movement along

the length of the thread.

86. (Canceled).

87. (canceled) The multi-position reclining bed of claim 53 or 57, further comprising an attached armrest, swing arm, and variable position swivel lock.

88. (canceled) The multi-position reclining bed of claim

102 further comprising a footrest located at the bottom of the calves section.

89. (canceled) The multi-position reclining bed of claim 54, further comprising a buttocks sling secured to the arm rest that allows the occupant's buttocks to be raised, relative to the buttocks section of the bed,

by lowering the buttocks section while the sling is supporting the weight of the occupant.

90. (canceled) The multi-position reclining bed of claim 102, further comprising a powered mechanism located behind the back section, that is capable of causing a protrusion of the back section of the mattress.

91. (canceled) The multi-position reclining bed of claim 54, further comprising a desk attached to the bed, the desk capable of supporting written material.

92-101. (Canceled).

102. (canceled) A multi-position reclining bed comprising:

- a. a horizontally situated elongated track,
- b. a plurality of supporting elements positioned above and overlying said track, and moveably coupled thereto, and comprising:

- i. a back section;
- ii. a buttocks section; and
- iii. a thigh/calve section,

said supporting elements being pivotably connected to each other at abutting edges and

- c. a linear actuator coupled to the supporting elements, said back section being coupled to said track section and configured to move an end portion thereof vertically in a vertical plane when, said linear actuator is activated,

such that when said back section is raised or lowered, said end portion remains substantially the same distance from an adjacent wall, and wherein said thigh/calve section reclines pivotally below a horizontal plane of the buttocks section in a downward direction pivotally about an adjoining edge with the buttocks section.

103. (canceled) The multi-position reclining bed of Claim 102 wherein said thigh/calve section comprises two independent sections, a thigh section and a calve section, connected to each other in a lockable co-planar configuration, and capable of independent movement when unlocked.

104. (canceled) The multi-position reclining bed of Claim 102 wherein said thigh/calve section, when in planar resting position, extends beyond said track, whereby when said back section is elevated, said thigh/calve section is provided clearance to drop below the horizontal plane of said track.

105. (canceled) The multi-position reclining bed of Claim 104 wherein said thigh/calve section is supported by a cantilever mechanism attached to the under side thereof, and secured to said track at a point toward the longitudinal center of the bed significantly inwards from the resting thigh/calve section thereby providing support to said thigh/calve section when said calve/thigh section is in planar resting position.

106. (canceled) The multi-position reclining bed of Claim 103 further including a pivot fixture coupled to a linear actuator, and a knee linear actuator couple to knee elevation support members, wherein said pivot fixture is pivotally connected between the buttocks section and the thigh section and said linear actuator moves said thigh/calve section, when locked in co-planar configuration, pivotably between horizontal and below the horizontal plane of said bed, and wherein, when horizontal, said knee linear

actuator locks and unlocks said thigh/calve sections to move said thigh and calve sections independently about each other and said buttocks section pivotably, and structurally supported by said knee elevation support members above the horizontal plane of said bed.

## **AMENDMENTS TO CLAIMS**

1-106. (Canceled).

107-128 (Canceled)

107. (Canceled) A multi-position reclining bed comprising:

- a. a horizontally situated elongated track,
- b. a plurality of supporting elements positioned above and overlying said track, and moveably coupled thereto, and comprising:
  - i. a back section, moved by back linear actuator;
  - ii. a buttocks section, moved by buttocks linear actuator; and
  - iii. a thigh/calve section, moved by a thigh/calve linear actuator

said supporting elements being pivotably connected to each other at abutting edges and

c. said back linear actuator coupled to the supporting elements, said back section being coupled to said track section and configured to move an end portion thereof vertically in a vertical plane when, said back linear actuator is activated, such that when said back section is raised or lowered, said end portion remains substantially the same distance from an adjacent wall, and wherein said coplanar thigh/calve section reclines pivotally below a

horizontal plane of bed in a downward direction pivotally about an adjoining edge with said buttocks section

d. a mattress that rests on said plurality of supporting elements

108. (Canceled) The multi-position reclining bed of Claim 107 further including; two independent sections; a thigh section and a calve section, and a knee linear actuator, a pivot fixture coupled to a coplanar thigh/calve linear actuator, and a knee linear actuator coupled to knee elevation support members, wherein;

said pivot fixture is pivotally connected to said buttocks section to provide a pivot for said knee elevation support members,

said thigh section and said coplanar calve/thigh linear actuator moves said coplanar thigh/calve section, when locked in a coplanar configuration, pivotably about said buttocks section below the horizontal plane of said bed, and wherein, when horizontal, said knee linear actuator locks and unlocks said thigh and said calve sections to move said thigh section and said calve section pivotably about each other while structurally supported by said knee

elevation support members and said pivot fixture above the horizontal plane of bed.

109. (Canceled) The multi-position reclining bed of claim 108 further including a transfer link and lock springs, wherein said thigh section and said calves section are configured into a locked position by said lock springs in their elongated state, that force said transfer link to remain in an over centered locked position whereby said knee linear actuator is eliminated.

110. (Canceled) The multi-position reclining bed of Claim 107 wherein said thigh/calve section, when in planar resting position, extends beyond said track, whereby when said back section is elevated, said thigh/calve section is provided clearance to drop below the horizontal plane of said track.

111. (Canceled) The multi-position reclining bed of Claim 107 wherein said coplanar thigh/calve section is supported by a cantilever mechanism attached to the underside thereof, and supported by said track at a point toward the longitudinal center of the bed thereby providing cantilever support to said coplanar thigh/calve section and whereby said track does not interfere when lowering said coplanar thigh/calve section to floor.

112. (Canceled) The multi-position reclining bed of claim 107, further comprising a swing arm attached to any of said supporting elements wherein said swing arm can swing over said mattress and to side of said mattress.

114. (Canceled) The multi-position reclining bed of claim 112 further comprising a plurality of arm rests wherein said armrests are secured to said swing arm.

115. (Canceled) The multi-position reclining bed of claim 112 further including a swivel lock wherein said swing arm is capable of locking into position by said swivel lock.

116. (Canceled) The multi-position reclining bed of claim 112 further comprising a desk wherein said desk is attached said swing arm.

117. (Canceled) The multi-position reclining bed of claim 112 further comprising electrical and data connections, wherein said electrical and data

connections are secured to said swing arm whereby they accessible to the occupant of the bed.

118. (Canceled) The multi-position reclining bed of claim 107, wherein said buttocks linear actuator and said buttocks section form a double bar linkage resulting in substantially minor vertical movement of the lower edge of the calves section of said coplanar leg section as said buttocks section is reclined.

119. (Canceled) The multi-position reclining bed of claim 107 further comprising a box spring having a reduced thickness at the lower edge of the calves section wherein said box spring allows top surface of said coplanar thigh calve section to lower within close proximity of floor.

120. (Canceled) The multi-position reclining bed of claim 107, further including a plurality of surfaces with varying coefficients of friction on said bed surface wherein a first said surface of high coefficient of friction grips said buttocks portion of said mattress, and a second said surface of low coefficient of friction allows back portion of mattress to slide along said back section.

121. (Canceled) The multi-position reclining bed of claim 107, further including a releasable mechanical holding device wherein said releasable holding device secures the mattress element to top of said supporting elements.

122. (Canceled) The multi-position reclining bed of claim 121, wherein said releasable mechanical holding device is located at a sufficient distance from the perimeter of the mattress and box spring to avoid interference with the placement of sheets and/or other bedding materials around the width of the mattress.

123. (Canceled) The multi-position reclining bed of claim 107, further comprising:

- a. a nut
- b. a socket
- c. a thrust ball bearing

- d. a compression spring
- e. threaded rod of said back section linear actuator
- f. a bearing housing

wherein said nut disengages during obstruction of downward reclining motion of said back section by action of rotating threaded rod that separates said nut from said socket when said spring becomes compressed.

124. (Canceled) The multi-position reclining bed of claim 114 further comprising a footrest located at the bottom end of said calves section and a foot rest actuating mechanism wherein said footrest can be moved along length of bed to support feet of person by said foot rest actuating mechanism.

125. (Canceled) The multi-position reclining bed of claim 112 further including a buttocks sling secured to said arm rests that allows the occupant's buttocks to remain elevated from surface of said mattress when said buttocks section is lowered.

126. (Canceled) The multi-position reclining bed of claim 107, further comprising a powered mechanism located behind the back section, that is capable of causing a protrusion of the back section of the mattress.

127. (Canceled) A multi-position reclining bed comprising:

- a. a horizontally situated elongated track,
- b. a plurality of supporting elements positioned above and overlying said track, and moveably coupled thereto, and comprising:
  - i. a back section, moved by back linear actuator;
  - ii. a thigh/calve section, moved by a thigh/calve linear actuator

said supporting elements being pivotably connected to each other at abutting edges and a swing arm and armrests, wherein said swing arm is attached to said supporting elements and said arm rests are attached to said swing arm.

128. (Cancelled) The bed of claim 127 further including a buttocks sling wherein said buttocks sling is secured to said armrests.

#### **Amendments to Claims**

129. (new) A multi-position reclining bed comprising:
- a. a horizontally situated elongated track,
  - b. a plurality of supporting elements positioned above and overlying said track, and moveably coupled thereto, and comprising:

- i. a back section, moved by back linear actuator;
- ii. a buttocks section, moved by a buttocks linear actuator; and
- iii. a coplanar thigh/calve section, moved by a coplanar thigh/calve linear actuator

said supporting elements being pivotably connected to each other at abutting edges and

c. said back linear actuator coupled to the supporting elements, said back section being coupled to said track section and configured to move an end portion thereof vertically in a vertical plane when, said back linear actuator is activated, such that when said back section is raised or lowered, said end portion remains substantially the same distance from an adjacent wall, and wherein said coplanar thigh/calve section reclines pivotally below a horizontal plane of bed in a downward direction pivotally about an adjoining edge with said buttocks section

d. a mattress that rests on said plurality of supporting elements

130. ( new) The multi-position reclining bed of Claim 129 further including; two independent sections; an independent thigh section and an independent calve section, and a knee linear actuator, a pivot fixture coupled to a coplanar thigh/calve linear actuator, and a knee linear actuator coupled to knee elevation support members, wherein;

said pivot fixture is pivotally connected to said buttocks section to provide a fixed pivot for said knee elevation support members,

said coplanar thigh/calve linear actuator moves said coplanar thigh/calve section, when locked in a coplanar configuration, pivotably about said buttocks section when below the horizontal plane of said bed, and wherein, when horizontal, said knee linear actuator locks and unlocks said independent thigh and said independent calve sections to move said independent thigh section and said independent calve section pivotably about each other while structurally supported by said knee elevation support members and said pivot fixture when above the horizontal plane of said bed.

131. (new) The multi-position reclining bed of Claim 129 wherein said thigh/calve section, when in a planar resting position horizontal with the

horizontal plane of bed, extends beyond said track, whereby said coplanar thigh/calve section is provided clearance to drop below the horizontal plane of said track when said back section is elevated.

132. (new) The multi-position reclining bed of Claim 129 wherein said coplanar thigh/calve section is supported by a cantilever mechanism attached to the underside thereof, and supported by said track at a point toward the longitudinal center of the bed thereby providing cantilever support to said coplanar thigh/calve section and whereby said track does not interfere when lowering said coplanar thigh/calve section to floor.

133. (new) The multi-position reclining bed of claim 129 further comprising a footrest located at the bottom end of said calves section and a foot rest actuating mechanism wherein said footrest can be moved along length of said coplanar thigh/calves section by said foot rest actuating mechanism to support feet of person.

134. (new) The multi-position reclining bed of claim 129, wherein said buttocks linear actuator and said buttocks section form a double bar linkage resulting in substantially minor vertical movement of the lower edge of the calves section of said coplanar leg section as said buttocks section is reclined.

135. (new) The multi-position reclining bed of claim 129 further comprising a box spring having a reduced thickness at the lower edge of the calves section wherein said box spring allows top surface of said coplanar thigh calve section to lower within close proximity of floor.

136. (new) The multi-position reclining bed of claim 129, further including a plurality of surfaces with varying coefficients of friction on said bed surface wherein a first said surface of high coefficient of friction grips said buttocks portion of said mattress, and a second said surface of low coefficient of friction allows back portion of mattress to slide along said back section.

137. (new) The multi-position reclining bed of claim 129, further including a releasable mechanical holding device wherein said releasable holding device secures the mattress element to top of said supporting elements.

138. (new) The multi-position reclining bed of claim 137, wherein said releasable mechanical holding device is located at a sufficient distance from the perimeter of the mattress and box spring to avoid interference with the placement of sheets and/or other bedding materials beneath perimeter edge of said mattress.

139. (new) The multi-position reclining bed of claim 129, further comprising a powered mechanism located behind said back section, that is capable of causing a protrusion of the back section of the mattress.

140. (new) A multi-position reclining bed comprising:

- i. a back section
- ii. a back section linear actuator;

said supporting elements being pivotably connected to each other at abutting edges

iii. a swing arm

iv. and armrests,

wherein said swing arm is attached to said supporting elements and said arm rests are attached to said swing arm and wherein said swing arm can swing over said mattress and side of said mattress.

141. (new) The multi-position reclining bed of claim 140 further including a swivel lock wherein said swing arm is capable of locking into position by said swivel lock.

142. (new) The multi-position reclining bed of claim 140 further comprising a desk wherein said desk is attached to said swing arm.

143. (new) The multi-position reclining bed of claim 140 further comprising electrical and data connections, wherein said electrical and data connections are secured to said swing arm whereby they accessible to the occupant of the bed.

144. (new) The multi-position reclining bed of claim 140 further including a buttocks section and a buttocks section linear actuator a buttocks sling said

buttocks section is moved pivotably about said back section by said buttocks section linear actuator wherein said buttocks sling is secured to said armrests whereby person can be suspended by said buttocks sling secured to said armrests above surface of said bed when lowering said buttocks section.